

# Studies on South African Thysanoptera—I

by

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## ***Liothrips gymnosporiae* Priesner (Fig. 1).**

I have obtained some more specimens of this species (common in Pretoria, Transvaal) from Mamathes, Basutoland, collected on the foliage of *Gymnosporia burifolia* Szysz. by A. F. Hean and B. Moffatt (4th January, 1940).

As this species has not yet been figured, I have given a drawing of the head and prothorax of a specimen from Fort Cox Agricultural College, Cape Province.

## ***Zuluella antennata* sp. n. (Figs. 2 and 3).**

Female (Apterous) Length about 2 mm.

General colour brownish yellow. Head uniformly brownish yellow, slightly darker along the cheeks and at the basal collar. Antennal segments I and II brownish yellow, the same shade as the head; III yellowish brown, paler on the pedicel; IV-VIII brown. Prothorax and pterothorax darker and slightly more brown than the head. Abdominal segments II-VIII brownish yellow like the head, the sides and a broad stripe along the anterior half of the segments browner; this brown line becomes gradually fainter caudad until it completely disappears at segment VIII; the basal fifth of the tube yellow, the rest brown. All legs yellow except the coxae of the fore legs which have a brownish tinge like the prothorax. Each tarsus with a black spot. All setae yellow except the terminals on the tube which are shaded with brown. Mesodermal pigmentation scant, red, most prominent in the pro- and the pterothorax.

Head about 1.4 times as long as width across the eyes and about 1.2 as long as the greatest width behind the eyes. Cheeks evenly rounded from the eyes to the base of the head, distinctly narrower at the hind angle of eyes, which is 0.83-0.86 the greatest width which is within the basal half of the head. Surface of head smooth, not reticulate. Prominent cheek spines absent. Eyes small, about 0.3 the length of the head, prominent, measuring on the dorsal surface as follows in  $\mu$ : length 64, width 46, interval 51. Post-ocular setae minute; post-ocular setae well developed, expanded at the tip, measuring as follows in  $\mu$ : 51-59 in length, 115-118 apart and 17-18 from hind margin of eye. Dorsocephalic setae minute, nearer together than the post-ocular setae and placed slightly caudad to a line passing through these latter. Ocelli absent. Vertex of head neither produced nor overhanging. Antenna about 1.8 times as long

as head, broad; segment III asymmetrical, with a bent pedicel, 1.46-1.50 times as long as wide, subequal to IV which is 1.42-1.49 times as long as wide; from IV segments gradually becoming shorter to VIII which is broadest at the base, thus more or less broadly joined to VII; shapes and chaetotaxy of the segments as in figure; sense cones distributed on the inner (outer) margin as follows: III 1(1), IV 2(2), V 1(1<sup>+</sup>), VI 1(1<sup>+</sup>), VII 1 on dorsum. Sense area on segment II within the apical half of the segment. Mouth cone short and broadly rounded, reaching about the middle of the prosternum.

*Prothorax* shorter than the head, along the median of the pronotum about 0.79-0.81 the length of the head, and, including the coxae, about twice as broad as long. Surface of the pronotum smooth, median thickening absent; epimera not fused with the pronotum. Usual setae present, all expanded at the tip, measuring as follows in  $\mu$ : antero-marginal 40-42, antero-angular 37-40, mid-lateral 40-47, epimeral 66-68, postero-marginal 58-62, coxal 47-55. Pterothorax distinctly narrower than the prothorax (including the coxae), widest at the anterior angles which are prominent. Wings absent. Fore legs short and slightly enlarged, fore femora and fore tibiae unarmed, fore tarsus armed with a small but distinct tooth. Middle and hind legs rather short, normal for the genus.

*Abdomen* broadest at segments III-V, thence gradually becoming narrower to the tube, at broadest point wider than the prothorax including the coxae. Terga I and II with only one pair of dorso-lateral setae, expanded at the tip, terga III-VI with one pair of dorso-lateral and one pair of lateral prominent setae, both pairs expanded at the tips; VII and VIII with the lateral pair pointed, while all the setae on IX are pointed. Pores on terga I-VI, 97-99, 34-36, 32-43, 42-54 40, 37-42  $\mu$  apart respectively. Tube short and conical, about 0.78-0.79 the length of the head and about 1.8-1.9 times as long as the greatest subbasal width which is about 2.2 times the least apical width. Longest seta on segment IX 121-128  $\mu$  long, shorter than the longest terminal seta on the tube which is 138  $\mu$  long.

*Measurements* of female (holotype) in mm.: length (fully distended) 2.42; head, median dorsal length 0.194, width across eyes 0.141, least width at hind angles of eyes 0.136, greatest width across cheeks 0.164, width at base 0.154; prothorax, median length of pronotum 0.154, width (including coxae) 0.325; pterothorax, width at anterior angles 0.275; abdomen, greatest width (segments III-IV) 0.350; tube, length 0.154, greatest subbasal width 0.085, least apical width 0.038.

Antennal segments . . .	1	2	3	4	5	6	7	8
Length in $\mu$ (holotype) . .	34	42	54	51	50	47	43	36
Length in $\mu$ (paratype) . .	41	43	54	55	50	46	43	33
Width in $\mu$ (holotype) . .	45	36	36	36	32	28	25	16

Total length of antenna of holotype 0.357 mm.

TRANSVAAL: Winterkamp, Loskop Dam, Middelburg, 14.1.1939, 2 females taken by W. Powell in a kloof on grass.

At first glance the present species appears to be the same as *Zuluella distincta* Jacot-Guillarmod, the genotype, but it may easily be separated by the following points: (1) the relatively shorter head, 1.2 times as long as the greatest width across the cheeks compared with 1.5 in *distincta*; (2) head narrower across the eyes than across the cheeks while in *distincta* the width is the same; (3) the relatively larger prothorax, 0.8 the length of the head and twice as long as wide as compared with 0.7 and 1.8 respectively; (4) the antennal segments III and IV, 1.46-1.50 and 1.42-1.49 times as long as wide respectively compared with 1.66 and 1.62; (5) the relatively longer tube 0.78-0.79 the length of the head compared with 0.63 in *distincta*; and (6) the much smaller tarsal tooth. Notwithstanding these numerous points of difference there is little doubt that these two species are congeneric. The shapes of the respective antennal segments are very similar even though they are broader in the present species; the shape of the head and the position of the prothoracic setae are almost identical.

**DEROTHRIPS** gen. nov.

Head about twice as long as wide, produced in front of the eyes, the projection distinctly wider at the anterior angle of eyes than at the base of the antenna. Post-ocular setae well separated. Eyes distinctly produced on the ventral surface of the head, dorsally less than half as wide as their interval, finely faceted. Ocelli small, well separated. Antennae eight segmented, all segments distinctly separated; sensorium of segment two placed within the distal third; sense cones and setae slender and normal in arrangement. Mouth cone short, reaching, about halfway down the prosternum. Maxillary palpi exceptionally short, segment two only slightly longer than one. Prothorax more than twice as broad as long. Epimera not fused with the pronotum. All setae on the pronotum comparatively short. Fore tibiae in the male armed with a tooth on the inner side near the apex, otherwise legs normal, the fore tarsus armed with a stout tooth in both sexes. Abdomen moderately broad, tube long, not quite as long as the head.

Genotype: *Derothrips amyae* sp. n.

The affinities of this genus are rather puzzling. The female could be placed with reservation in *Elaphrothrips* Buffa, although the shape of the head is more like that of *Oedaleothrips* Hood; the male, however, at once excludes it from *Elaphrothrips*, as it has armed fore tibiae and there is little doubt that this form represents an underscribed genus. The long tube, the armed fore tibiae and numerous other characters exclude it from *Oedaleothrips*, to which it is not at all closely related. It differs from *Elaphrothrips* in the armed fore tibiae of the male, the eyes which are greatly produced ventrally

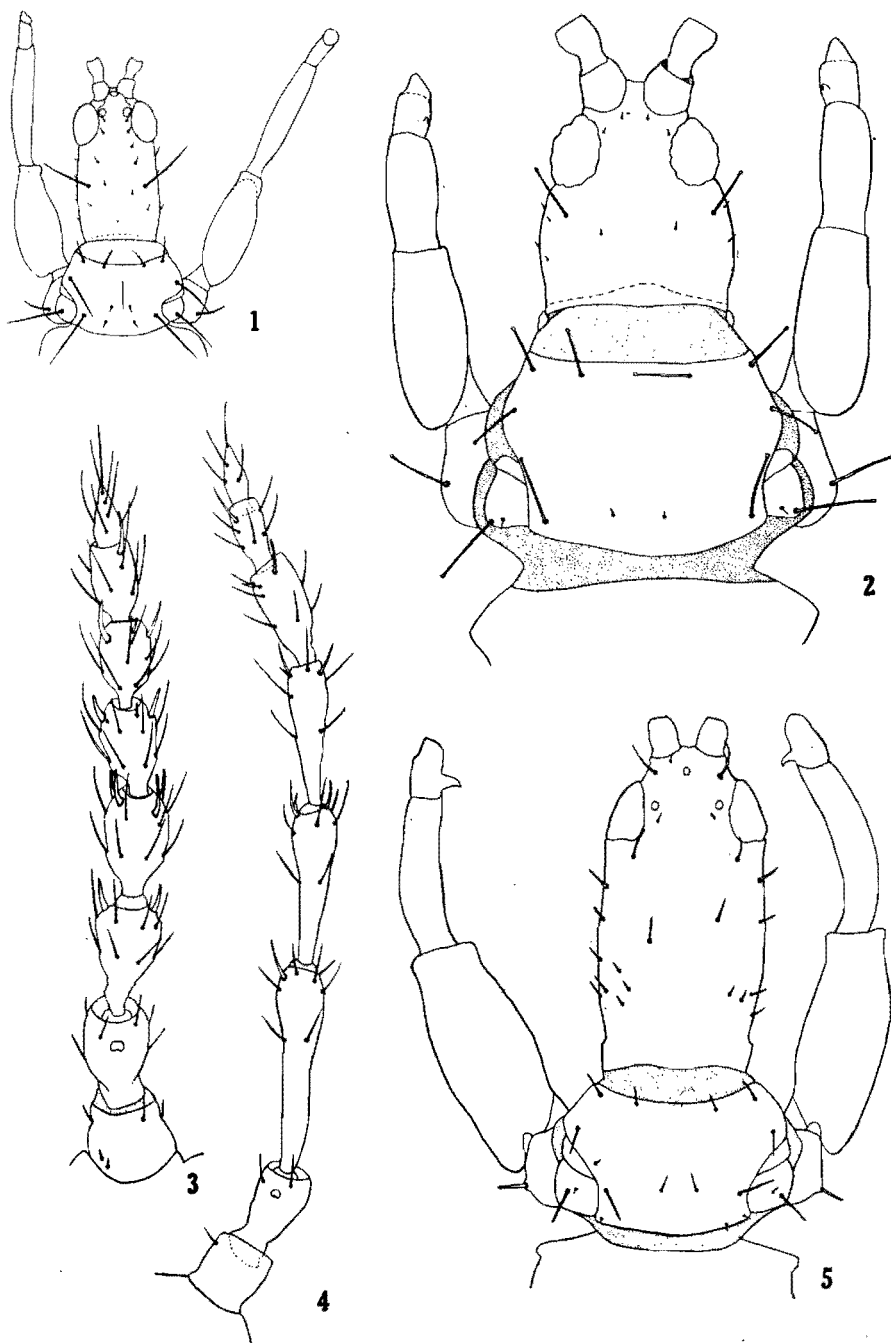


Fig. 1: *Liothrips gymnosporiae* Priesner, head and prothorax of female.  
 Fig. 2: *Zuluella antennata* sp.n., head and prothorax of female.  
 Fig. 3: *Zuluella antennata* sp.n., right antenna of female.  
 Fig. 4: *Derothrips amyae* gen. et spec. nov., left antenna of female paratype.  
 Fig. 5: *Derothrips amyae* gen. et spec. nov., head and prothorax of female, paratype (all setae omitted from the legs).

and are much smaller dorsally, the very short maxillary palpi, the shape of the head projection in front of the eyes, and the general appearance of the head. From *Fulgorothrips* Faure, which has ventrally produced eyes, it may at once be distinguished by the much shorter head projection, and from *Ophthalmothrips* Hood by the anterior ocellus not being placed on a cone-shaped projection overhanging the base of the antennae. These last two genera also have unarmed fore tibiae in the male and the anterior edge of the pronotum thickened, but as this latter character seems to vary within genera it does not appear to be of generic importance at least in this group of thrips. *Bolothrips* Priesner, which sometimes has ventrally produced eyes, cannot be confused with the present genus.

***Derothrips amyae* sp. n. (Figs. 4 and 5).**

Female (brachypterous). Length about 3.5 mm. General colour dark brown to black. Head black between the eyes, gradually turning to dark brown towards the base. Colour of antennal segments: I and II dark brown, a shade paler than the head, II paler still round the sensoria; apical third of III brown, the basal two thirds clear yellow; IV similar to III but with the apical half brown; V similar to IV except that the brown colour is slightly more than the apical half; VI-VIII dark brown; the darker portions of segments III-V are lighter on III and gradually darken towards V. Prothorax and pterothorax dark brown. Abdomen dark brown at base, shading into black towards tube. Tube black. All legs dark brown except the anterior trochanters and fore tarsi which are a paler brown. Epidermal pigment where visible bright red.

Head about as broad across the eyes as at the greatest width across the cheeks, where it is 1.92-2.00 times as long as wide; weakly produced beyond the eyes, the process distinctly converging towards its apex, 2.38 times as wide at its base as long and 2.10-2.12 as wide at the base of the antenna as long, and 0.24-0.25 as long as the greatest width of the head across the cheeks. Cheeks sub-parallel, very slightly diverging from near the eyes to about halfway and then converging rather sharply to the base where a distinct collar is formed (this is the narrowest portion of the head); no indications of tempora present; the length of the cheeks about 1.40 as long as the width of the head at the first pair of cheek spines; cheeks set with about four short, rather blunt spines, the anterior one about 24-28  $\mu$  long. Head surface smooth except the basal collar which has fine cross lines. Ante-ocellar setae pointed, about 77  $\mu$  long and 123  $\mu$  apart. Post-ocellar setae very small and weak. Post-ocular setae weak and bluntly pointed, about 51  $\mu$  long, 177  $\mu$  apart, 36  $\mu$  from the base of the eyes. Dorsocephalic setae about 30  $\mu$  long, and pointed. Eyes rather small, dorsally less than a quarter the total length of the head, distinctly produced ventrally, their measurements in  $\mu$  in a paratype as follows: Dorsal length 118, width 61, interval 164; Ventral length 205, width 61, least interval 112. Ocelli

small, the posterior pair with their fore margins in a line which would mark off about the anterior third of the eyes; in a paratype their diameter is  $11\ \mu$ , interval  $115\ \mu$  and their distance from the median ocellus  $77\ \mu$ ; diameter of median ocellus  $13\ \mu$ . Antennae about 1.56 times as long as the head; none of the segments produced ventrally at the apex; segment III 4.46-4.51 times as long as wide and 1.19-1.29 times as long as IV which itself is 3.46-3.90 times as long as wide and 1.21-1.23 times as long as V; shapes and chaetotaxy of segments as given in figure. Sense cones slender (outer one on III about  $44\ \mu$  long), distributed on inner (outer) surfaces as follows: III 1(1), IV 2(2), V 1(1+1), VI 1(0+1), VII one on dorsum. Mouth cone short and rounded, the acute labrum not surpassing the rounded labium. Maxillary palpi short, the first segment  $23\ \mu$  long and the second  $28\ \mu$  long and  $15\ \mu$  wide in a paratype.

*Prothorax* along the median line of the pronotum about 0.4 the length of the head and (including the coxae), not quite two-and-a-half times as wide as long. Surface of the pronotum smooth, median thickening absent and anterior margin not thickened. Epimera not fused with the pronotum. Usual setae present, bluntly pointed, comparatively weak, measuring as follows in  $\mu$ : Antero-marginal 21, antero-angular 33, mid-lateral 36, epimeral 69, postero-marginal 69, coxal 51-61. Fore legs enlarged, fore femora with a few stout spines on the outer hind angle, unarmed; fore tibiae unarmed but the inner apical angle slightly produced along the tarsus; fore tarsus armed with a stout curved tooth. Middle and hind legs normal. Wings represented by short pads. Pterothorax distinctly narrower than the prothorax (including the coxae).

*Abdomen* widest at segment two, wider than either the pro- or the pterothorax. Lengths of segments VII-IX in a paratype in  $\mu$  133, 123, 154, respectively. Pores on terga I absent, on II 95, III 61, IV 69  $\mu$  apart. Terga II-VII with a row of five to seven small setae on each side of the pores; VIII a pair between the pores and about two on each side, IX with two pairs between the pores. Longest setae on segment IX as long as or shorter than the tube, about 333-411  $\mu$  long. Tube relatively long, 0.73-0.72 the length of the head and about 3.1-3.3 as long as the greatest subbasal width which is slightly more than twice the least apical width. Terminal setae on the tube distinctly shorter than those on segment IX, about 278-300  $\mu$  long.

*Measurements* of holotype (female) in mm.: Length 3.6; head, median dorsal length 0.544, width across eyes 0.283, width at hind angles of eyes 0.278, least width across cheeks 0.273, greatest width across cheeks 0.283, least basal width 0.256; head process in front of eyes, length 0.069, width at base 0.164, width at base of antennae 0.146; prothorax, median length of the pronotum 0.230, width (including coxae) 0.530; pterothorax, greatest width 0.466; abdomen, width (at segment II) 0.611; tube, length about 0.389, greatest subbasal width 0.123, least apical width 0.056.

Antennal segments . . .	1	2	3	4	5	6	7	8
Length in $\mu$ (Holotype) .	77	87	194	164	133	102	69	69
(Paratype) .	77	87	205	159	131	100	61	67
Width in $\mu$ (Holotype) .	58-63	45	43	42	38	37	32	24
Total length of antenna 0.895 mm.								

Male (brachypterous). Length about 3.5 mm. In colour the male is very similar to the female in all respects. In structure it is also similar to the female but differs in the following: Head relatively narrower, and distinctly widest across eyes, 2.04 times as long as width across eyes and 2.12 the greatest width across cheeks; head process in front of the eyes 2.3 times as wide across base as long and 2.06 as wide at the base of the antenna as long. Antennae similar to those of the female but III appears to be relatively narrower, 4.93 times as long as wide and both III and IV have a long, spatula-tipped seta on the outside; otherwise the antennae are like those of the female. The prothorax is more heavily built, 2.03 times as wide (including the coxae) as long along the median line of the pronotum, but in comparison with the length of the head it is similar to that of the female. Coxal setae stronger. The fore legs are slightly more developed than in the female, with a stronger curved tarsal tooth and a distinct tooth near the inner angle of the tibia. The abdomen is narrower, wider than the pterothorax but less than the prothorax (including the coxae). The lengths of terga VII-IX in  $\mu$  are 194, 194, 154 respectively. Longest setae on abdominal segment IX about 300  $\mu$  and the terminal setae on the tube about 278  $\mu$ .

*Measurements* of allotype (male) in mm.: Length 4.04 (fully distended); head, median dorsal length 0.544, width across eyes 0.267, width at hind angles of eyes 0.256, least width across cheeks 0.250, greatest width across cheeks 0.256, least basal width 0.228; head process in front of eyes, length 0.067, width at base 0.154, width at base of antenna 0.138; prothorax, median length of pronotum 0.235, width (including coxae) 0.478; pterothorax, width 0.443; abdomen, width (segment II) 0.456; tube, length about 0.356, greatest subbasal width 0.118, least apical width 0.051.

Antennal segments . . .	1	2	3	4	5	6	7	8
Length in $\mu$ . . . . .	77	82	207	160	128	100	61	67
Width in $\mu$ . . . . .	55-61	42	42	41	37	34	30	24
Total length of antenna 0.882 mm.								

Described from four brachypterous specimens (three females and one male) all collected by Professor J. C. Faure as follows:—

One female paratype: 20.1.1923, Hermanus, Cape Province, "sweepnet".

Female holotype, male allotype and one female paratype: 11.1.1938, Gordon's Bay, Cape Province, on *Elegia parviflora* Kunth. These specimens were taken together with a species of *Oedaleothrips* and one female of *Plectrothrips capensis* Jac.-Guil.

It is my privilege to be able to dedicate this new species to Miss A. F. Hean who has always taken a keen interest in the collection of Thysanoptera and in this way has helped me considerably in obtaining valuable additions to my collection.

The affinities of this interesting new form have been discussed under the genus.